

SEQUENCE LISTING

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 James, Judith A.
 Kaufman, Kenneth M.

<120> Diagnostics and Therapy of Epstein-Barr Virus in
 Autoimmune Disorders

<130> OMRF 161 CIP Provisional

<140> Not Yet Assigned
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<160> 113

<170> PatentIn Ver. 2.1

<210> 1
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<220>
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 virus Nuclear Antigen-1 Protein

<400> 1
 Pro Pro Pro Gly Arg Arg Pro
 1 5

<210> 2
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 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Epstein-Barr
 virus Nuclear Antigen-1 Protein

<400> 2
 Gly Arg Gly Arg Gly Arg Gly Gly
 1 5

<210> 3
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 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Epstein-Barr
 virus Nuclear Antigen-1 Protein

<400> 3

Arg Gly Arg Gly Arg Glu Lys
1 5

<210> 4
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<220>
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<400> 4
Pro Pro Pro Gly Met Arg Pro Pro
1 5

<210> 5
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
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<400> 5
Pro Pro Pro Gly Ile Arg Gly Pro
1 5

<210> 6
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<220>
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<400> 6
Pro Ala Pro Gly Met Arg Pro Pro
1 5

<210> 7
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<220>
<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus Nuclear Antigen-1

<400> 7
Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala Gly Ala
1 5 10 15

Gly Ala Gly Ala Gly Ala Gly Ala

<400> 11
Ser Pro Leu Ser Thr Leu Leu
1 5

<210> 12
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<220>
<223> Description of Artificial Sequence: Phage

<400> 12
Lys Ile Gly Phe Pro His Ile
1 5

<210> 13
<211> 7
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<220>
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<400> 13
Ile Pro Arg Pro Leu Asp Tyr
1 5

<210> 14
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<220>
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<400> 14
Met Lys Leu Lys His Pro Pro
1 5

<210> 15
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Ile Leu Pro Pro Pro Gly Tyr
1 5

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<220>
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<400> 16
Ala Val Ile His Arg Pro Pro
1 5

<210> 17
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Ala Leu Ile Gln Arg Pro Pro
1 5

<210> 18
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<220>
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<400> 18
Val Pro Leu Thr Val Leu Leu
1 5

<210> 19
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<220>
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<400> 19
Ser Pro Pro Glu Leu Lys
1 5

<210> 20
<211> 7
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<220>
<223> Description of Artificial Sequence: Phage

<400> 20

005022-1000550

Lys Phe Leu Ala Pro Leu Gln
1 5

<210> 21
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<400> 21
ccagaggtaa gtggactt
18

<210> 22
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<400> 22
gaccggtgcc ttcttagg
18

<210> 23
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<212> DNA
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<400> 23
aagacgattc gggttgtgag gtggtgtggg tccgtgtgtg atgtgtgtgg gtgggcag
58

<210> 24
<211> 32
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<220>
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from Epstein-Barr virus Nuclear Antigen-1

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Gly Gly Ser Gly Pro Gln Arg Arg Gly Gly Asp Asn His Gly Arg Gly
1 5 10 15

Arg Gly Arg Gly Arg Gly Arg Gly Gly Arg Pro Gly Ala Pro Gly

<220>
<223> Description of Artificial Sequence: Octapeptide
from Epstein-Barr virus Nuclear Antigen-1

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<210> 26
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<220>
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from Epstein-Barr virus Nuclear Antigen-1

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Arg Pro Gln Lys Arg Pro Ser Cys
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  1             5             10             15
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<210> 28
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from Epstein-Barr virus Nuclear Antigen-1

<400> 35

Asp Asp Pro Gly Glu Gly Pro Ser Thr Gly Pro
1 5 10

<210> 36

<211> 10

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from Epstein-Barr virus Nuclear Antigen-1

<400> 36

Gly Pro Ser Thr Gly Pro Arg Gly Gln Gly
1 5 10

<210> 37

<211> 9

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<220>

<223> Description of Artificial Sequence: Octapeptide
from Epstein-Barr virus Nuclear Antigen-1

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Gly Gln Gly Asp Gly Gly Arg Arg Lys
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<210> 38

<211> 15

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Octapeptide
from Epstein-Barr virus Nuclear Antigen-1

<400> 38

Asp Gly Gly Arg Arg Lys Lys Gly Gly Trp Phe Gly Lys His Arg
1 5 10 15

<210> 39

<211> 12

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<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Octapeptide
from Epstein-Barr virus Nuclear Antigen-1

<400> 39
Gly Lys His Arg Gly Gln Gly Gly Ser Asn Pro Lys
1 5 10

<210> 40
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Octapeptide
from Epstein-Barr virus Nuclear Antigen-1

<400> 40
Gly Gly Ser Asn Pro Lys Phe Glu Asn Ile Ala
1 5 10

<210> 41
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Octapeptide
from Epstein-Barr virus Nuclear Antigen-1

<400> 41
Arg Ser His Val Glu Arg Thr Thr Asp
1 5

<210> 42
<211> 10
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<220>
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from Epstein-Barr virus Nuclear Antigen-1

<400> 42
Arg Thr Thr Asp Glu Gly Thr Trp Val Ala
1 5 10

<210> 43
<211> 8
<212> PRT
<213> Artificial Sequence

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from Epstein-Barr virus Nuclear Antigen-1

Pro Gln Pro Gly Pro Leu Arg Glu
1 5

<210> 48
<211> 8
<212> PRT
<213> Artificial Sequence

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from Epstein-Barr virus Nuclear Antigen-1

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Cys Asn Ile Arg Val Thr Val Cys
1 5

<210> 49
<211> 10
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from Epstein-Barr virus Nuclear Antigen-1

<400> 49
Arg Val Thr Val Cys Ser Phe Asp Asp Gly
1 5 10

<210> 50
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
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from Epstein-Barr virus Nuclear Antigen-1

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Pro Pro Trp Phe Pro Pro Met Val Glu Gly
1 5 10

<210> 51
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Type III
Peptide

<400> 51
Ser Pro Leu Asn Val Leu Met

5

<400> 52
Gln Leu Pro Pro Pro Gly Tyr
1 5

<400> 53
Ile Leu Pro Pro Ser Gly Tyr
1 5

<400> 54
Val Leu Pro Pro Pro Gly Tyr
1 5

<400> 55
Val Leu Ala Pro Pro Gly Tyr
1 5

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<210> 56
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<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Phage Peptide

<400> 56

Thr Leu Pro Pro Pro Gly Arg

1 5

<210> 57

<211> 7

<212> PRT

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<220>

<223> Description of Artificial Sequence: Phage Peptide

<400> 57

Ala Arg Ile Leu Tyr Pro Pro

1 5

<210> 58

<211> 7

<212> PRT

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<220>

<223> Description of Artificial Sequence: Phage Peptide

<400> 58

Ala Thr Ile Tyr Tyr Pro Asn

1 5

<210> 59

<211> 7

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<220>

<223> Description of Artificial Sequence: Phage Peptide

<400> 59

Ala Val Ile Asn Arg Pro Pro

1 5

<210> 60

<211> 7

<212> PRT

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<223> Description of Artificial Sequence: Phage Peptide

<400> 60
Ala Ser Ile Leu Arg Pro Pro
1 5

<210> 61
<211> 7
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<220>
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<400> 61
Ala Thr Ile Phe Arg Pro Ser
1 5

<210> 62
<211> 7
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<220>
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<400> 62
Ala Gln Ile Leu Arg Pro Leu
1 5

<210> 63
<211> 7
<212> PRT
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<220>
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<400> 63
Gln Leu Pro Leu Ser Leu Val
1 5

<210> 64
<211> 7
<212> PRT
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<400> 64
Ser Pro Leu Ser Thr Leu Ile
1 5

<210> 65
<211> 7
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<220>
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<400> 65
Ser Pro Leu Thr Thr Leu Leu
1 5

<210> 66
<211> 7
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<400> 66
Ser Pro Leu Ser Thr Leu Arg
1 5

<210> 67
<211> 7
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<400> 67
Ser Pro Ile Ser Thr Leu Ala
1 5

<210> 68
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<400> 68
Ser Pro Leu Ser Ser Leu Thr
1 5

<210> 69
<211> 7
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<400> 69
Ser Pro His Thr Thr Leu Trp
1 5

<210> 70
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<400> 70
Ser Pro Tyr Thr Ile Leu Thr
1 5

<210> 71
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<400> 71
Gln His Phe Lys His Pro Pro
1 5

<210> 72
<211> 7
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<400> 72
Met Gln Lys Val Lys His Pro
1 5

<210> 73
<211> 7
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<220>
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<400> 73

Ala Leu Lys Asp Lys Leu Pro
1 5

<210> 74
<211> 7
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<400> 74
Ala Asn Leu Asp Lys Leu Pro
1 5

<210> 75
<211> 7
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Ala Ala Gly Ile Lys Leu Pro
1 5

<210> 76
<211> 7
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<400> 76
Lys Ile Gly Phe Pro Ile Leu
1 5

<210> 77
<211> 7
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Tyr Leu Thr Pro Leu Gln Ile
1 5

<210> 78

<211> 7
<212> PRT
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<400> 78
Ala Phe Leu Pro Thr Leu Gln
1 5

<210> 79
<211> 7
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<223> Description of Artificial Sequence: Phage Peptide

<400> 79
Ser Leu Phe Pro Trp Gln Arg
1 5

<210> 80
<211> 7
<212> PRT
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<220>
<223> Description of Artificial Sequence: Phage Peptide

<220>
<223> XAA at site 1 and site 4 represent any amino acid

<400> 80
Xaa Phe Leu Xaa Pro Leu Gln
1 5

<210> 81
<211> 7
<212> PRT
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<223> Description of Artificial Sequence: Phage Peptide

<400> 81
Val Pro Arg Pro Leu Asp Ile
1 5

<210> 82
<211> 7
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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Phage Peptide

<400> 82

Asn His Ser Leu Pro Leu Pro
1 5

<210> 83

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Phage Peptide

<220>

<223> XAA at site two represents any amino acid

<400> 83

Cys Xaa Leu Ser Val Leu Lys
1 5

<210> 84

<211> 7

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Phage Peptide

<400> 84

Met Pro Tyr Met Met Tyr Gln
1 5

<210> 85

<211> 7

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Phage Peptide

<400> 85

Ala Gly Arg Leu Gln Arg Thr
1 5

<210> 86

<211> 7

<212> PRT

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Phage Peptide

<220>
<223> XAA at site 1 and 2 represents any amino acid

<400> 86
Xaa Xaa Ile Gln Arg Pro Arg
1 5

<210> 87
<211> 7
<212> PRT
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<220>
<223> Description of Artificial Sequence: Phage Peptide

<400> 87
Arg Gln Pro Cys Tyr Ala Pro
1 5

<210> 88
<211> 7
<212> PRT
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<220>
<223> Description of Artificial Sequence: Phage Peptide

<400> 88
Gln Pro Thr Tyr Pro Thr Pro
1 5

<210> 89
<211> 7
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<220>
<223> Description of Artificial Sequence: Phage Peptide

<220>
<223> Xaa at site 5 represents any amino acid

<400> 89
Ala Thr Thr Gln Xaa Thr Trp
1 5

<210> 90
<211> 6
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<223> Description of Artificial Sequence: Phage Peptide

<400> 90

Ile Leu Pro Leu Arg Gly
1 5

<210> 91

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Phage Peptide

<220>

<223> Xaa at sites 1,2 and 7 represents any amino acid

<400> 91

Xaa Xaa Leu Ala Pro Pro Xaa
1 5

<210> 92

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Phage Peptide

<400> 92

Ala Lys Pro Phe Lys Thr Lys
1 5

<210> 93

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Phage Peptide

<400> 93

Met Pro Asn Pro Val Ser Gly
1 5

<210> 94

<211> 7

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Phage peptide

<400> 94

His Pro His His Leu Pro Pro
1 5

<210> 95

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Type X Peptide

<400> 95

Ser Pro Pro Glu Trp Leu Lys
1 5

<210> 96

<211> 8

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Glycine

<400> 96

Ser Pro Pro Glu Trp Leu Lys Gly
1 5

<210> 97

<211> 8

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide

<400> 97

Gly Pro Pro Pro Met Arg Pro Pro
1 5

<210> 98

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 98

Gly Pro Gln Arg Arg Gly Gly Asp Asn His Gly Arg Gly Arg Gly Arg

1

5

10

15

Gly Arg Gly Arg Gly Gly Gly Arg Pro Gly
20 25

<210> 99

<211> 13

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 99

Gly Thr Gly Ala Gly Ala Gly Ala Arg Gly Arg Gly Gly
1 5 10

<210> 100

<211> 8

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 100

Ser Gly Gly Arg Gly Arg Gly Gly
1 5

<210> 101

<211> 12

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 101

Arg Gly Gly Ser Gly Gly Arg Arg Gly Arg Gly Arg
1 5 10

<210> 102

<211> 16

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 102
Arg Ala Arg Gly Arg Gly Arg Gly Arg Gly Glu Lys Arg Pro Arg Ser
1 5 10 15

<210> 103
<211> 15
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<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 103
Ser Ser Ser Ser Gly Ser Pro Pro Arg Arg Pro Pro Pro Gly Arg
1 5 10 15

<210> 104
<211> 25
<212> PRT
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<220>
<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 104
Arg Pro Pro Pro Gly Arg Arg Pro Phe Phe His Pro Val Gly Glu Ala
1 5 10 15

Asp Tyr Phe Glu Tyr His Gln Glu Gly
20 25

<210> 105
<211> 8
<212> PRT
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Epstein-Barr virus

<400> 105
Gly Pro Ser Thr Gly Pro Arg Gly
1 5

<210> 106
<211> 10
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Epstein-Barr virus

<400> 106

Gly Lys His Arg Gly Gln Gly Gly Ser Asn
1 5 10

<210> 107

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 107

Gly Gln Gly Gly Ser Asn Pro Lys
1 5

<210> 108

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 108

Asn Pro Lys Phe Glu Asn Ile Ala
1 5

<210> 109

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

<400> 109

Arg Ser His Val Glu Arg Thr Thr
1 5

<210> 110

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Peptide from
Epstein-Barr virus

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27

Asp Gly Gly Arg Arg Lys Lys Gly Gly Trp Phe Gly Lys His
Arg
1 5 10 15

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28

Gly Lys His Arg Gly Gln Gly Gly Ser Asn
1 5 10

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29

Gly Gln Gly Gly Ser Asn Pro Lys
1 5

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30

Asn Pro Lys Phe Glu Asn Ile Ala
1 5

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 8 amino acids

(B) TYPE: amino acid

- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31

Arg Ser His Val Glu Arg Thr Thr
1 5

- (2) INFORMATION FOR SEQ ID NO:32:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 9 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:32

Val Phe Val Tyr Gly Gly Ser Lys Thr
1 5

- (2) INFORMATION FOR SEQ ID NO:33:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 9 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:33

Gly Ser Lys Thr Ser Leu Tyr Asn Leu
1 5

- (2) INFORMATION FOR SEQ ID NO:34:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 8 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:34

Gly Met Ala Pro Gly Pro Gly Pro
1 5

- (2) INFORMATION FOR SEQ ID NO:35:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 8 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:35

Pro Gln Pro Gly Pro Leu Arg Glu
1 5

- (2) INFORMATION FOR SEQ ID NO:36:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 8 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:36

Cys Asn Ile Arg Val Thr Val Cys
1 5

- (2) INFORMATION FOR SEQ ID NO:37:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 10 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:37

Arg Val Thr Val Cys Ser Phe Asp Asp Gly
1 5 10

- (2) INFORMATION FOR SEQ ID NO:38:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 10 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: protein
 - (iii) HYPOTHETICAL: NO
 - (iv) ANTI-SENSE: NO
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:38

